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TITLE: Brake positioning system

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INVENTOR-INFORMATION:

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CLAIMS:

1. A woodworking machine comprising: a blade selected from an operable range of sizes; a detection system adapted to detect a dangerous condition between a person and the blade; a brake adapted to stop the blade in response to detection of the dangerous condition; and a brake positioning system configured to allow the brake to be selectively positioned in at least two different operable positions to accommodate at least two different blade sizes.
2. The woodworking machine of claim 1, where the brake positioning system is configured to prevent installation of the blade if the brake is not in the operable position corresponding to the size of the blade.
3. The woodworking machine of claim 1, where the brake positioning system is configured to prevent operation of the machine if the brake is not in the operable position corresponding to the size of the blade.
4. The woodworking machine of claim 1, where the brake positioning system is configured to prevent the brake from being positioned in an operable position that does not correspond to the size of the blade.
5. The woodworking machine of claim 1, where the machine is a saw, and where the blade is a circular blade.
6. The woodworking machine of claim 1, where the brake positioning system is configured to be selectively positioned in at least two different operable positions at least one inch apart.

7. A woodworking machine comprising: a working portion adapted to work when moving; a detection system adapted to detect a dangerous condition between a person and the working portion; a reaction system associated with the detection system to cause a predetermined action to take place relative to the working portion upon detection of the dangerous condition, where the reaction system includes a component positioned adjacent the working portion; and a positioning system adapted to allow the component to be positioned in more than one position adjacent the working portion to accommodate working portions of different sizes.

8. A woodworking machine comprising: a working portion adapted to work when moving; means for detecting a dangerous condition between a person and the working portion; reaction means associated with the detection system for causing a predetermined action to take place relative to the working portion upon detection of the dangerous condition; and means for positioning at least a portion of the reaction means in more than one position adjacent the working portion to accommodate working portions of different sizes.

9. A woodworking machine comprising: a cutter adapted to cut a workpiece; a motor adapted to drive the cutter; a detection system adapted to detect a dangerous condition between a person and the cutter; a brake mechanism having a brake adapted to engage the cutter to stop the cutter; a spacing detection system associated with the brake mechanism and adapted to detect whether the spacing between the cutter and the brake is within a predetermined range; and a control system adapted to prevent operation of the motor if the spacing detected by the spacing detection system is out of the predetermined range.

10. The machine of claim 9, where the spacing detection system includes an electronic sensor adapted to detect whether the spacing between the cutter and the brake is within a predetermined range.

11. The machine of claim 9, where the spacing detection system includes a magnetic sensor adapted to detect whether the spacing between the cutter and the brake is within a predetermined range.

12. The machine of claim 9, where the spacing detection system includes an optical sensor adapted to detect whether the spacing between the cutter and the brake is within a predetermined range.

13. The machine of claim 9, where the brake is mounted in a removable cartridge, and where the spacing detection system detects whether the spacing between the cutter and the brake is within a predetermined range by detecting whether the spacing between the cutter and the cartridge is within a predetermined range.

14. A woodworking machine comprising: a cutter; a motor adapted to drive the

cutter; a brake adjustably positionable adjacent the cutter; a sensor system adapted to sense the spacing between the cutter and the brake; and a control system configured to control the operation of the motor and to receive a signal from the sensor system representative of the spacing between the cutter and the brake, where the control system is further configured to selectively prevent operation of the motor dependent on the signal received from the sensor system.

15. A woodworking machine comprising: a cutter adapted to cut a workpiece; means for detecting a dangerous condition between a person and the cutter; a brake configured to engage and stop the cutter; means for detecting whether the spacing between the cutter and the brake is within a predetermined range; and means for preventing operation of the cutter if the spacing between the cutter and the brake is out of the predetermined range.

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TITLE: Replaceable brake mechanism for power equipment

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INVENTOR-INFORMATION:

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CLAIMS:

1. A woodworking machine comprising: a support frame including a work surface for supporting workpieces; a cutting tool supported by the frame and movable relative to the work surface to cut the workpieces supported by the work surface; and a safety brake system configured to detect a dangerous condition between a person and the cutting tool, and to stop movement of the cutting tool upon detection of the dangerous condition; where the safety brake system includes one or more single-use components mounted in a cartridge removably coupled to the support frame.
2. The machine of claim 1, where the cartridge is sealed against entry of sawdust.
3. The machine of claim 1, where the one or more single-use components includes a fusible member.
4. The machine of claim 3, where the safety brake system includes a firing system adapted to melt the fusible member, and where the firing system is mounted in the cartridge.
5. The machine of claim 4, where the firing system includes a capacitor.

6. The machine of claim 1, where the safety brake system includes a brake pawl selectively movable to engage the cutting tool upon detection of the dangerous condition, and where the brake pawl is mounted in the cartridge.

7. The machine of claim 6, where the safety brake system includes a spring mounted in the cartridge and arranged to urge the brake pawl into contact with the cutting tool.

8. The machine of claim 7, where the safety brake system includes a fusible member mounted in the cartridge and arranged to hold the brake pawl spaced-apart from the cutting tool until the dangerous condition is detected.

9. The machine of claim 8, where the safety brake system includes at least one capacitor configured to store electrical charge to melt the fusible member upon detection of the dangerous condition, and where the capacitor is mounted in the cartridge.

10. The machine of claim 1, further comprising at least one motor configured to drive the cutting tool, and a control system configured to determine if at least one of the single-use components mounted in the cartridge has been used, and where the control system is configured to prevent operation of the at least one motor if one of the single-use components has been used.

11. The machine of claim 1, where the cartridge includes key structure, and where the support frame includes corresponding key structure configured to engage the cartridge key structure to prevent incorrect installation of the cartridge.

12. A woodworking machine comprising: a cutting tool adapted to cut a workpiece; a motor adapted to drive the cutting tool; a detection system adapted to detect a dangerous condition between a person and the cutting tool; and a brake system adapted to stop the cutting tool upon detection of the dangerous condition, where at least part of the brake system is housed in a cartridge and the cartridge is sealed against entry of sawdust.

13. The machine of claim 12, where the cartridge includes at least one opening sealed by a plastic film.

14. The machine of claim 12, where the cartridge includes at least one opening sealed by a metal film.

15. The machine of claim 12, where the brake system includes at least one brake pawl mounted in the cartridge, and where the brake pawl is selectively movable into contact with the cutting tool upon detection of the dangerous condition.

16. The machine of claim 12, where the brake system includes at least one

brake pawl and an actuator configured to move the brake pawl into contact with the cutting tool, and where the actuator is mounted in the cartridge.

17. A woodworking machine, comprising: a support frame; a cutter supported by the support frame; a brake cartridge mountable on the support frame and including a brake pawl adapted to selectively engage and stop the cutter; and a brake positioning system associated with the support frame and adapted to receive and operably position the brake cartridge relative to the cutter.

18. The machine of claim 17, where the brake positioning system allows the cartridge to be adjusted to accommodate different sized cutters.

19. The machine of claim 17, where the brake positioning system includes a pivot on which the cartridge is mounted, and where the position of the brake cartridge relative to the cutter is adjusted by rotating the cartridge on the pivot.